Typha Shuttleworthii, Koch and Sonder in Synops. Flor. Germ. et Helv., II., 786.
Juncus maritimus, Lam. Encycl. Bot., III., 264.
Cyperus angustatus, R. Br. prodr., 214.
Cyperus rotundus, L. Syst. Veg., 98.
Panicum villosum, R. Br. pr., 192.

ART. XIX.—*Notes of a recent personal visit to the unoccupied Northern District of Queensland.* By WILLIAM LOCKHART MORTON, Esq., *with a Map of the District.*

[Read before the Institute, January 23, 1860.]

I HAVE the honor to lay before the Institute, this evening, a few particulars respecting the extreme northern limits of civilisation in Australia, and in reference to a considerable extent of unoccupied country to the north and west of those limits.

I propose to confine my remarks to the climate, to the geographical features, and the geological character of the country I travelled over, and to its capabilities as an agricultural and pastoral settlement; concluding with some general remarks explaining how few facilities are granted for actual settlement.

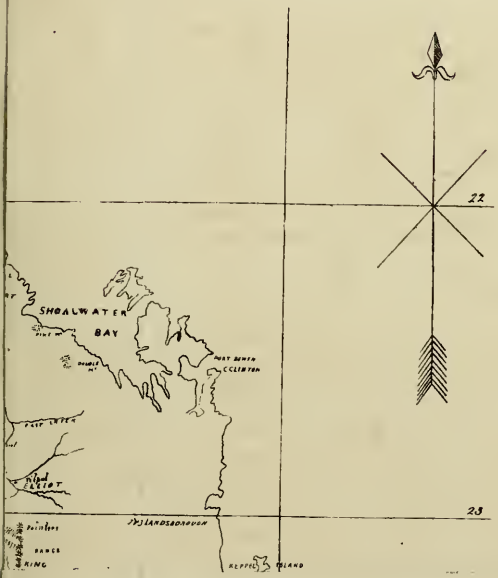
Landing at Rockhampton, on the Fitzroy River, I went, in company with two other persons, first northerly, parallel to the coast, to within a few miles of Mount Funnel. Afterwards, travelling westerly from Broad Sound, I crossed the River Isaacs, and traced up the Mackenzie for about one hundred miles.

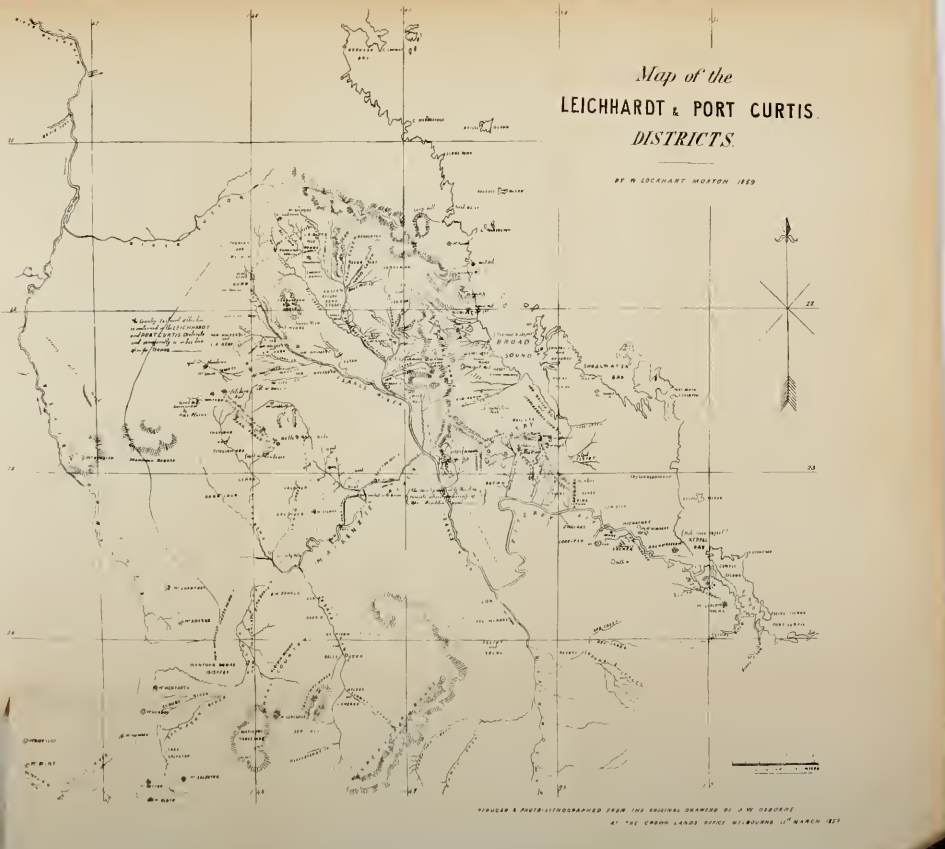
For the sake of distinctness, I propose to begin with the River Fitzroy.

This river, which is formed, as you are all aware, by the confluence of the two large rivers, the Isaacs and Mackenzie, was first discovered by Dr. Leichhardt, empties itself through several channels into Keppel Bay. This bay at one time doubtless extended thirty miles further west, or as far inland as the site of Rockhampton, but it has apparently been gradually filled up by the debris of the river; a process which is

Map of the
LEICHHARDT & PORT CURTIS.
DISTRICTS.

BY W. LOCKHART MORTON 1859.




Map of the
LEICHHARDT & PORT CURTIS
DISTRICTS.
BY H. LOCKHART MORTON 1859
BROAD
SOUND
PRINTED & PHOTO-LITHOGRAPHED FROM THE ORIGINAL DRAWING BY J. W. OSBORNE
AT THE CROWN LANDS OFFICE MELBOURNE 15th MARCH 1859

still going on, as the level mud flats, and even the well grassed level plains, still liable to inundation, sufficiently prove.

The hills in the neighbourhood of the mouths of the Fitzroy appear to be composed of slaty rocks, which dip at a high angle to the east. Portions of the top of a high range opposite to Rockhampton are quite white, apparently with quartz. It is probable that gold may hereafter be found there.

The country, within eight miles of Rockhampton, is in general level and intersected with numerous lagoons; and possessing a rich soil, abundantly grassed, is admirably adapted for cattle pasturage. On the south of Rockhampton, and distant one and five miles respectively, occur two isolated low ranges of porphyry, with an exceedingly hard slaty rock and masses of fossils. This formation, which frequently occurs along the coast to the north, produces gold.

About eight miles up the river, and west from the township, there is an extensive tract of open undulating downs, the soil of which is formed from decomposed basalt. I may take the liberty of mentioning that the Rev. Mr. Clarke is of opinion, judging from a small quantity I showed him, that this soil is similar to the cotton-growing soil of India. Further up the river, towards the crossing place, and N.W. of this fine tract of country, the land is in general level, and well watered by lagoons; the soil is rich, and well grassed. Any cattle observed were in fine condition. At the crossing place of the Fitzroy, which is about thirty miles up from Rockhampton, the stones of the river-bed consist almost entirely of quartz, exceedingly waterworn, with occasional pieces of fossil wood and chalcedony. I afterwards found that the rivers Isaacs and Mackenzie do not differ from the Fitzroy in this respect.

The country on the north bank is level, swampy, well grassed, and openly timbered. Five miles up, a hilly country begins. Passing the station of Messrs. Ramsay and Gaden, where the rock is clay slate, I travelled for several miles over a well grassed country, intersected by deep creeks. Everywhere the soil is exceedingly rich. Magnesian limestone abounds in the creeks, and lies scattered on the surface. Crossing a narrow strip of serpentine, I came again upon clay slate, with great abundance of quartz covering the ranges and slopes. There is a considerable extent of this country which, besides possessing well grassed flats between the ranges, bears every appearance of being auriferous. I ob-

served, however, that the quartz reefs trend to the east of north. About fifteen miles N.W. from Messrs. Ramsay and Gaden's station, I came upon a country entirely of serpentine. The rock is soft, and might be used for ornamental purposes. Between the lofty ranges of naked rocks extend long wide flats of rich black soil, well grassed, and abounding in springs, the waters of which taste strongly of magnesia; and, I may also add, affect the bowels. Petrifaction, or rather incrustation, is ever going on. The surface is, in many places, strown with grains of magnetic iron, exceedingly round and polished. Under the rich black soil is a stratum of white earthy matter, apparently a deposit of magnesia from the springs: the heat of the ground is continually evaporating the water, the magnesia held in solution being left in the soil.

Passing Mr. Radford's station, which is about 25 miles N. W. from Messrs. Ramsay and Gaden's, the serpentine formation continues for five or six miles, when some basalt appears in dykes. Further north, and near Mr. Henning's station, the formation is granitic. Rising out of the flat country of rich black soil on the west of the granite, and half a mile from it, is an isolated low range of little hills, composed entirely of iron ore (supposed to be chrome-iron), so rich that small portions of the ore are readily lifted by a magnet. Millions of tons of this ore could be obtained without any trouble or expense, beyond the operation of lifting it into drays. This range is distant from Broad Sound about twenty miles, and is near to Marlborough Creek, a tributary of the Fitzroy. Half a mile west from the position of the iron ore, is a singular hill called "Redcliff;" evidently of volcanic origin. What appeared to me as remarkable, however, is, that with scoriæ at its base, and a brown or reddish igneous rock at its summit, on the hill itself are patches of clay-slate of a light colour, apparently un-metamorphised. Near the top are round and oval masses of magnesia.

The country in this neighbourhood is a first-class "cattle country." The cattle, on this the furthest north and furthest west station, look well, and though they have only been on the run a few months, are in fine condition and seem remarkably healthy. The sheep on the various stations do not look so well as they ought; the fault, I am inclined to think, not of the country, but of the shepherding. They seem very healthy. There is abundance of "yolk" in the fleece. The climate is certainly not too warm for sheep; but,

in my opinion, all the country near the coast is better adapted for cattle or horses.

A few miles north of Marlborough Creek, after crossing a porphyritic rock, of the same description as exists near Rockhampton, I came upon ground strown with quartz; further on, in approaching the range that divides the waters of Broad Sound from those of Fitzroy, occur veins of the same rock. There is no well defined range, but a continuation of broken country, consisting of clay-slate with veins of quartz. This country, extending for twelve or fifteen miles north and, as I afterwards found, many miles to the west, is destined, I have no doubt, to be a future gold-field. Beyond this contry to the north, and on the waters of Broad Sound, there is, I think, a carboniferous formation. In the beds of the creeks there is a friable shale. Large masses of sandstone in some places appear on the surface; and there are hills, three or four hundred feet high, with flat tops of horizontal strata of sandstone rock. The country here is level, soil sandy, openly timbered, well grassed, and abundantly watered. At Tuloomba Creek, which is a tributary of the Styx, and about twenty-five miles N.W. from Marlborough, are the farthest out white men, engaged in forming a new station. I ascended here a sandstone peak, like a pyramid, and saw Prospect Hill, which bears N. 33° W., and is distant about twenty miles. The intervening country is all level, well grassed, and is watered by running creeks. Many fragments of quartz, tinged with iron, are scattered over the surface, and indicate that the hills to the west are probably covered with this rock.

Prospect Hill is isolated, but is only a few miles distant from the coast range. It is of porphyritic rock, and, like all the other hills of porphyry, has at its base the same compact slaty rock observed at Rockhampton. Beyond this hill, to the north, between the sea and the coast range, which is high and well defined, is a level, well grassed and watered country, finely adapted for cattle.

Eight miles north from Prospect Hill, after crossing some marine plains from which the sea has recently receded, I ascended a low hill near the coast, naming it Sea View Hill. Its rock is of grey porphyry, much weathered, and contains cubes of iron pyrites of a deep yellow, probably from an admixture of gold. North 55° E. from this hill is the mouth of a tidal river, seemingly half a mile wide. Unable to cross this river, we had to follow it up westerly,

and pass over four or five well watered creeks that fall into it. Here, we first observed a branching pandanus ; and first came upon "devil devil" flats. There is an old, and a more recent, description of this singular surface ; the former being furthest from the sea. It is evidently produced by some kind of worm which builds flat-topped hillocks upon the original surface. An experienced horse can generally step from one to another ; but what annoys both horse and rider, is the circumstance that the old variety is generally covered with rich strong grass, rendering the uneven surface invisible.

Crossing a range of porphyry, and a fine running creek further north, winding between lofty hills of porphyry, and over some fine undulating grassy country, we passed over several tidal rivers on bars of rock. At the distance of about ten miles from Sea View Hill, hills and ranges of porphyry approach the coast. For three or four miles the country is very hilly and perfectly worthless. Grass trees and zamia trees are numerous ; the latter bearing a fruit which seems to be much eaten by the blacks. A hill, remarkable for having its western side almost vertical, and which is distant from Prospect Hill about twenty miles, bearing N. 7° W., I named Mount Upright.

About eight miles N.N.W. from the latter hill, we passed an isolated hill of granite, naming it Druid's Mount. The country is here well grassed and watered ; and six miles further, having crossed a fine large running creek, we passed the angle where the coast range approaches nearest to the coast. There is in this neighbourhood some fine well watered cattle country, but there is a good deal of "devil devil" land, which, although considered excellent for cattle, must be considered as inferior to a sound level country.

From the hill at this angle, the coast range trends greatly to the N.W., gradually leaving the coast. Four miles beyond we came to a fine large shady creek. We found here ripe figs (Oct. 10th) on fine large shady trees, with polished leaves. In this variety of fig, the second we had noticed, Australia fully sustains her claims to singularity. The figs, which are about the size of a loquat, are yellow when ripe, and possess a fragrant smell and agreeable taste, and grow in bunches like grapes ; strange to say, not attached to the leafy branches, but to any portion of the naked branch or the naked trunk, even to the root. But what is even more strange, every ripe fig is inhabited by small clear black flies, like winged ants, but with long tails, consisting of a single

hair. There is no opening by which these creatures can have entered; and, that they are prisoners is proved by the fact that those figs I plucked and brought away enclose now their inhabitants dead and embalmed. There is no appearance of them, or of their *ovæ* or *larvæ*, in the unripe figs. The moment the fig is opened they vanish, and it may then be eaten. Three miles further we again came upon a creek, rising at the foot of a hill about a thousand feet high, which, as usual, consisted of porphyry. We ascended it next morning, and obtained one of the most magnificent views that can possibly be conceived. The vast ocean was, as it were, lying at our feet, and clear and smooth as glass, glittering in the sun of the early morning, and studded with innumerable islands, great and small, far as the eye could reach. From this hill Mount Funnel bears N. 13° W. That singular island, or ocean pyramid, known as "West Hill," N. 35° E., thirty or forty miles out in the sea, in the N.E., is a most remarkable island with level top, the northern end overhanging the perpendicular ten or fifteen degrees. From this point we returned, and keeping more inland, found that the country was much better, and nearly every creek was running.

In reference to the blacks, although we found in many places their tracks, like those of cattle, and notwithstanding that we frequently heard them by night, I think that the portion of the coast we travelled over is, upon the whole, but thinly inhabited.

On the 21st of October we again started from Marlborough, to proceed inland. To the west the whole country is unoccupied. We followed a marked tree line through an indifferently grassed box forest for ten miles, when we came upon a clay-slate formation—the slate almost vertical, or dipping slightly to the east, and the stratification trending to the west of north, with abundance of gold-bearing quartz on the ranges, and in veins. This country is on the west and south-west of the same formation I noticed when along the coast, and proves that there is a considerable extent of ground in all probability auriferous. Should this prove to be the case, there is abundance of water in the creeks for washing. This formation continued for eight or ten miles to the west, when we came upon a fine, well grassed, openly timbered country, watered by Apis Creek, and numerous fine waterholes. A very high and almost impassable, range (Connar's Range) of porphyry divides this fine country from the river Isaacs. From its lofty summit I had expected to

obtain a good view of the distant interior, but the declining sun and the smoke of bush fires prevented this. At a great distance S. 10° W., I saw what I considered as the Expedition Range of Dr. Leichhardt, but it is either a range more to the north, or Expedition range trending round to the N.W. and W. With this exception, the whole view to the westward was like a vast level plain covered with forest, in which the peculiar shade of the brigalow scrub was but too plainly visible. South west, and distant fifteen or twenty miles, I observed two reaches of water, a portion, I believe of the main channel of the River Mackenzie. Going west from this range, in four miles we came to the River Isaacs; a fine large ever flowing river, with reaches of water one hundred yards wide, and lined with lofty gum trees. Great floods must pour down this river, which comes from the N.W., as I have never seen in any river the trees on the banks so much torn up and destroyed. The soil here is rich and well grassed, but both banks are very scrubby. There is here an entire change in the geological formation. A sedimentary rock, containing pieces of dark shale, and indicating the presence of lime when touched with acids, slopes at a low angle to the west, in the bed of the Isaacs.

We followed up the Isaacs for five miles, and crossed it at the junction of another large river, which I think is the flood branch of the Mackenzie. This crossing place and junction of the two rivers is about forty miles west, by compass, from Marlborough.

Following up the Mackenzie, which comes from the S. W., we entered upon a level country subject to great floods. We ascended this river for one hundred miles, and it is all the same, and is easily described. A winding river, liable to great floods, flows through a level country. Patches of brigalow scrub are never out of sight. There are no open plains, but long strips of openly timbered country, alternating with strips or patches of brigalow scrub. All the open country, at certain periods, is liable to inundation. Flood-channels break away from the river, and cutting off great bends, or curving away from the river for many miles, enter it again; and beyond their influence scrubs almost invariably exist. The soil is everywhere rich, richest in the scrubs. Grass is everywhere abundant in the open country. Grass and a small variety of saltbush is nearly always abundant in the scrubs; but for which there could be no better pastoral country, and with which it is equal to fatten any

kind of stock. Cattle, however, would become wild. As brigalow is like the Myall, it is probable if it were once burned, cattle would keep down the fresh young shoots. I observed many places where it seems to be perishing, and there most luxuriant grass grows.

About twenty miles up a range approaches the river, and a small hill stands near to the left bank. This hill, about three hundred feet high, seems entirely composed of pieces of fossil wood, waterworn pieces of sandstone, and quartz, held together by a sandy cement; just as if those remains of antiquity had, at some period less remote, been brought there by water, and left to become a conglomerate, to be subsequently upheaved into their present position. I took the liberty of naming this Mary's Hill, after Mrs. Morton. The position is north by compass, from the steep western end of the range before mentioned. That range is most remarkable for its abrupt termination to the west, descending from a great height at an angle of 75°, and when once seen, can never be afterwards mistaken.

About eight or ten miles above Mary's Hill we turned up a tributary that comes from the N. W. We went up this creek about twenty-five miles, and saw some beautifully grassed undulating country, thinly timbered with narrow-leaved ironbark. Over the whole of this country the surface is strewed with fragments of fossil wood, whilst trunks of trees are sometimes met with lying on the surface, but broken into lengths of twelve or fifteen inches, and completely changed into silica. Sometimes the sun-cracks, or what is apparently such, are filled with quartz, quite white and in crystals. We here came upon a tribe of blacks, who fled from us in great haste, leaving everything behind them. This fine country, just large enough for one station, seems entirely encompassed by dense brigalow scrub.

On this creek I saw in some scrub, near a waterhole, a number of human vertebræ and a thigh bone; also the cannon or shank bone of a horse or bullock. We looked about in order to find the skull, by which to determine whether the bones belonged to the remains of a white or black man, but without success. Beyond this fine open country we went N.W. ten miles into a dense brigalow scrub, which becoming more difficult by the presence of a swamp oak scrub, we returned to follow up the Mackenzie. But desirous to see what was on the east of the open country, we, on our return, went easterly, and soon came upon high open downs richly grassed.

To the east and north east there was apparently only scrub and thick forest. Here I again got a view of the remarkable range before mentioned. Its steep western end bore S. 10° E. As evening approached and the trees and belts of forest threw their long dark shadows along the beautiful, open, and verdant plains, kangaroos of great size were to be seen on all sides.

Proceeding up the Mackenzie, which above the junction of the creek we had gone up, comes from the south and the south east, in six miles the bed of the river becomes quite changed—the banks become higher, the river much larger, and great reaches of water stretch away for miles, almost in a straight line. I have no doubt, that another, and the main branch of the Mackenzie, strikes off here to the right, to join the river Isaacs fifteen or twenty miles more to the south than the branch we had come up.

Three miles below this enlargement of the river, a large flood-channel comes in from the west, and because this channel points out a much better course than the river for any future dray-road up the river, on our return I marked this spot, by cutting my initials and a broad arrow on the north side of a large tree of Moreton Bay ash, which stands on the flat about sixty yards from the edge of the water. I observed here the footprints of some unknown animal. They were larger than those of a Newfoundland dog; round, not oblong, and with marks of claws. I traced them up the steep clay bank into the scrub.

On this flood-channel there is open well grassed country, and six miles up it there are numerous large reaches of water. On the river itself, round the great bend which the channel cuts off, there is good country. Where this flood-channel breaks out from the river, twelve miles up, there are good geological sections of horizontal sandstone strata, with the ends of petrified trunks of trees projecting from the face of the cliffs. The Mackenzie is here divided into several channels, in one of which I found large angular pieces of coal, bright when fractured, and in appearance equal to the best coal. Carrying a large quantity to the top of the bank, here about one hundred feet high, I made a fire, and found that the coal burns with a bright and lofty flame, and a strong smell of bitumen.

Five miles further, after crossing a considerable creek coming from the N.W., when riding along a plain where the course of the river is north, I again got a view of the re-

markable range before mentioned. The steep end bore S. 25° E. It is, therefore, about thirty-five or forty miles distant from the Mackenzie.

We went forty or fifty miles above this open plain. Reaches of water, many miles in length, and one hundred yards in width, are interrupted by bars of sandstone rock. Such are the only crossing places, and generally the only places where stock could drink; so steep and difficult are the banks. The river flows in a zig-zag course; several miles east and north alternately, making a general course of north-east. Flood-channels slightly curving away from the river, or following a straight course, cut off on each side those great bends. To follow these channels is the only way to travel on the Mackenzie with any degree of comfort, for close upon the river itself scrubs are frequent, and though the banks, sloping from the edge of the high land, are free from scrub, they are cut with numerous deep, steep-sided gullies by waters that have flowed from the level ground above.

All the open country does not consist of plains, but of thinly timbered and well grassed long narrow strips, running parallel to the river. Behind are patches or belts of scrub. Further back the land generally rises, and the slopes are strewn with quartz stones, two or three inches in diameter, and exceedingly water-warn. Further back there are some large tracks of open country, with large blocks of sandstone cropping out. The soil consists of loose sand, thinly grassed, and difficult to travel over.

I felt much interest in observing in a stratum of sandstone an angular piece of beautiful bright coal embedded—proving that this piece of coal is of greater age than the sandstone, and than the seams of coal which that sandstone now overlies.

In the scrubs of the Mackenzie we found two kinds of native fruits: the lemon which is mentioned by Dr. Leichhardt, and an extremely acid fruit, of a rusty purple color, enclosing a large smooth stone; each stone having two kernels so oily that they burn readily when touched with the flame of a candle. This fruit is about the size of a small apple, and grows on a tree from fifteen to twenty-five feet high, with leaves like the mountain ash. Bauhinia trees, with snowy white and purple blossoms, are everywhere abundant on the river banks, and their fragrance embalms the air. The river swarms with fish, and large muscles are